

# Utah's AIS Management Plan

## **Action Plans and HACCP Plans for Utah**

Already, several action plans dealing with AIS exist within Utah (e.g. National Park Service's "Zebra Mussel Prevention at Glen Canyon National Recreation Area;" Utah Division of Wildlife Resources' "Action Plan for Containment of Quagga Mussel at Lake Powell," "Quagga Mussel Education and Implementation Plan," and "New Zealand Mudsnail (*Potamopyrgus antipodarum*) Management Plan For Loa Hatchery"). The same is true for Hazard Analysis Critical Control Point plans that in-part address AIS in Utah (e.g. U.S. Fish and Wildlife Service's "Utah Field Office Hazard Analysis Critical Control Point Plan," "Ouray National Hatchery Hazard Analysis Critical Control Point Plan," "Jones Hole National Hatchery Hazard Analysis Critical Control Point Plan," and Utah Division of Wildlife Resources' 12 Utah State Fish Hatchery Hazard Analysis Critical Control Point plans—Fish Experiment Station, Loa, Midway, Kamas, Springville, Whiterocks, Mantua, Glenwood, Egan, Mammoth Creek, Wahweap, and Fountain Green). Others action plans and Hazard Analysis Critical Control Point plans will likely result, providing greater focus for AIS management at specific locales in Utah.

## **Purpose of Utah's AIS Management Plan**

In 2008, Utah Division of Wildlife Resources formed and chaired a Utah Aquatic Invasive Species Task Force for the purpose of developing and implementing this Utah Aquatic Invasive Species Management Plan. Members of the task force represent multiple tribal, federal, state, local and private conservation entities, and they are listed in the Acknowledgements section of this plan. Plan implementation is ongoing, and each entity of the task force shoulders varying degrees of responsibility for program conduct, which is determined by their statutory authority and budget strength during individual years. An Implementation Table for the plan is presented as Appendix K.

The primary purpose for a Utah Aquatic Invasive Species (AIS) Management Plan is to develop and document a program and associated protocols to be implemented for AIS management within Utah. The Utah plan has been developed to be strategic in scope; it will serve as the foundational document to guide planning and to conduct work as it relates to AIS in Utah. And, at times it will serve as a supportive document for AIS grant applications. The plan will undoubtedly be the base from which other AIS action plans tier.

Utah Division of Wildlife Resources secured \$2.5 million from Utah's Legislature for AIS program work in fiscal year (FY) 2008 (\$1.1 million) and FY2009 (\$1.4 million), of which \$1.4 million is ongoing General Funds. Virtually no funds existed for this work prior to FY2008. Although the current economy is without certainty, it is anticipated that the ongoing General Funds will continue each fiscal year into the foreseeable future.

The Utah Division of Wildlife Resources in FY2009 committed \$1,549,415 of budget (\$1.4 million annually appropriated by the Utah Legislature as ongoing general funds, \$67,900 restricted funds from hunting and fishing license sales, \$81,515 donated funds

from participating partners), supporting numerous full time equivalencies (26.01), which represent 69 personnel, in the Utah AIS program as follows:

- 1 Statewide AIS Coordinator (full time);
- 1 Outreach Specialist (full time);
- 1 Natural Heritage Biologist (part time);
- 5 Regional AIS Biologists (full time);
- 56 Wildlife Technicians (seasonal watercraft inspectors);
- 5 Conservation Officers to assist as needed with AIS enforcement issues (2 full time and 3 partially funded).

FY2009 funds amount to \$1,549,415 and most of it supports salary (\$1,099,688) for 69 program personnel. Day-to-day operational expenses (\$389,179), most of which are vehicle operation and travel (\$22,938) are funded, too. The day-to-day costs include multiple outreach products--brochures, flyers, signs and billboards, costing \$31,200 per year. Most of the program's 31 trailer mounted decontamination units, each costing \$13,400 were purchased in fiscal year 2008, although two were purchased in fiscal year 2009. And, \$10,810 in research funds have been committed in fiscal year 2009 for purchase of a suitable microscope. Appendix L contains cost details for the fiscal year 2009 budget. All personnel identified in Appendix L have significant roles in carrying out most of the actions identified in Appendix K. It is more accurate to specify cost per employee than it is to specify cost per action. The actions are comingled in the day-to-day activities of every employee.

Implementation of this plan is entirely dependant upon sufficient budget being secured.

The U.S. Fish and Wildlife Service's Denver Colorado Regional Office maintains an Aquatic Nuisance Species Coordinator. The U.S. Forest Service's Intermountain Regional Office in Ogden, Utah maintains an Aquatic Nuisance Species Coordinator, too. And, the Bureau of Reclamation's Regional Office in Salt Lake City, Utah also maintains an intra-agency AIS task force. All three of these agencies serve on the Utah AIS Task Force. Each position is funded by its respective agency such that significant programmatic support is directed toward implementation of Utah's AIS Management Plan.

All of the other Utah AIS Task Force members have additional agency roles besides their assignment to the Utah AIS Task Force. They are individually committed to keep AIS in strong focus within their respective agencies, including the provision of funds and personnel, when possible, for in-the-field operations. Much success has been met to date.

### **Goal of Utah's AIS Management Plan**

The goal of the Utah AIS Management Plan is to improve the ability of natural resource management entities within Utah to prevent invasion of AIS into the state, and to contain AIS through accepted management practices to areas that are either already infested or become infested (Appendix K). This goal is not limited in time and should be viewed as

extending in perpetuity. The following objectives, strategies and related actions will facilitate accomplishment of this singular, lofty goal.

### **Objectives and Strategies of Utah's AIS Management Plan**

**Outreach Objective (A):** The Utah AIS Management Plan will establish and increase outreach efforts directed at public education. The intent is so Utah's public, particularly the media, governmental agencies, outdoor-associated recreational organizations, boaters, and anglers will realize the threats and impacts from AIS, and become partners in AIS education, interdiction, decontamination, and management (Appendix K).

**Media Strategy (1):** Coordinate Utah's media (national, regional, statewide and local newspapers, magazines, radio stations and television stations), including targeted programming ("Utah at Your Leisure" and "Roughin It Outdoors") to repeatedly tell the AIS story, by identifying opportunity for the media to market their publications and broadcasts, promoting the "Stop Aquatic Hitchhikers" slogan in combination with the decontamination protocols (Appendix K).

- Two primary actions will occur (Appendix K):
  - # **IA1a:** Promote proactive AIS stories to the media—yearlong;
  - and
  - # **IA1b:** Promote reactive AIS stories to the media—yearlong.

**Public Education Strategy (2):** Educate the public, particularly Utah boaters, at a variety of venues (e.g. organized angler and boater meetings, International Sportsman Expo, Greenspan Boat Show, Garden Show, state and county fairs, launch sites and Utah's Ports of Entry) about AIS. The process will be to explain the AIS issue, and encourage the public to spread the "word," creating peer pressure for decontamination compliance. This strategy also includes presentations to natural resource management agencies within Utah and across the west about the AIS issue (Appendix K).

- Four primary actions will occur (Appendix K):
  - # **IA2a:** Present and explain the AIS story statewide to tribal, federal, state & local governments, and sportsman groups—yearlong;
  - # **IA2b:** Present and explain the AIS story statewide at expos, shows & fairs—yearlong;
  - # **IA2c:** Present and explain the AIS story statewide at boat launch ramps—yearlong; and
  - # **IA2d:** Present and explain Utah's AIS program worldwide to other natural resource management entities—yearlong.

**Public Education Strategy (3):** Pursue cooperative opportunities to expand the education strategy statewide to venues like the Living Aquarium and their educational van (they visit schools in the Wasatch Front area of Utah), Hogle Zoo and their docent education program (they visit schools statewide), and the Utah Natural History Museum (Appendix K).

- One primary action will occur (Appendix K).  
# **IA3a:** Explore cooperative opportunity at other educational venues statewide to present and explain the AIS story—yearlong.

**Education Products Strategy (4):** Display AIS outreach product produced by Utah Division of Wildlife Resource statewide (e.g. highway billboards, tailgate wraps on UDWR trucks, boat launch ramps, water-based recreation areas, boat dealers and marine repair shops, restaurants, local dive shops, and sporting good stores) (Appendix K).

**Note:** Cabela's and Sportsman Warehouse outlets are each willing and have facilities that can be used for public AIS presentations.

- One primary action will occur (Appendix K).  
# **IA4a:** Develop & display outreach product statewide at every conceivable location in order to stimulate public recognition & reaction to the AIS problem—yearlong.

**Water User Education Strategy (5):** Pursue opportunity to make AIS presentations at venues where water user groups gather (e.g. Utah Water Users Conference, river basin meetings, water rights managers meeting, etc.) (Appendix K).

- One primary action will occur (Appendix K):  
# **IA5a:** Develop presentations & displays about AIS, presenting them statewide at gatherings of water users or natural resource managers who regulate water users—yearlong.

**Next Generation Education Strategy (6):** Coordinate with Utah's educators in concurrence with the state science coordinator to educate the next generation of boaters by developing formalized in-class-room tutorials for secondary level school teachers to present to their students. The educational content must correlate to Utah's core curriculum and be done in cooperation with Project WILD (Appendix K).

- One primary action will occur (Appendix K):  
# **IA6a:** Consistent with the Utah Board of Education's core curriculum and in cooperation with Project WILD, develop presentations & educational product about AIS for use statewide by secondary school teachers—yearlong.

**Web Site Education Strategy (7):** This strategy also includes web site development for AIS message delivery, and the sharing of educational material amongst educators, the Utah AIS Task Force and other states (Appendix K).

- One primary action will occur (Appendix K):  
# **IA7a:** Coordinate with UDWR's web master for appropriate web site development to present the AIS story and make available associated educational material to Utah's public—yearlong.

**University Education Strategy (8):** Coordinate with appropriate local university and college personnel to make AIS presentations to their students, either in classroom settings or as a visiting lecturer at organized symposiums (Appendix K).

- One primary action will occur (Appendix K):  
# **IA8a:** Develop presentations & educational product about AIS for use statewide by university educators or by professional ecologists as visiting lecturers—yearlong.

**Interdiction and Decontamination Objective (B):** The Utah AIS Management Plan will facilitate increased interdictions of boats and equipment contaminated with AIS, requiring decontamination under authority of the Utah Aquatic Invasive Species Interdiction Act and Rule R657-60 Aquatic Invasive Species Interdiction in order to control the spread of AIS (Appendix K).

**Interdiction Strategy (1):** Utah Division of Wildlife Resources' staff, including authorized volunteers, Utah Peace Officers, which includes Conservation Officers and state Park Rangers, and Utah Department of Transportation Port of Entry Agents, under authority of the Utah Aquatic Invasive Species Interdiction Act, and other properly trained natural resource management personnel, will interdict boats at launch ramps, administrative check sites, and Utah's Ports of Entry to detect boats and equipment contaminated with AIS (Appendix K).

- One primary action will occur (Appendix K):  
# **IB1a:** Statewide, interdict boats and equipment potentially contaminated with AIS at launch ramps, administrative check sites, and Utah's Ports of Entry—yearlong.

**Decontamination Strategy (2):** Boat owners and operators will be contacted in-the-field or at a variety of other venues, including through media publications or broadcasts, one-on-one education or at group presentations, in order to tutor them about AIS. The boaters will be provided guidance about how to decontaminate their watercraft and equipment as per established protocols (Appendix K).

- Three primary actions will occur (Appendix K):  
# **IB2a:** Statewide, decontaminate boats and equipment contaminated with AIS at launch ramps, administrative check sites, and Utah's Ports of Entry, or other places of opportunity--yearlong  
# **IB2b:** Statewide, educate boaters and others about how to decontaminate their potentially AIS infested equipment using an approved do-it-yourself method or an approved professional method—yearlong.
  - **Do-it-Yourself Decontamination:** Boat owners must clean and drain their boat and equipment as they leave a water body, then dry it for an appropriate amount of time between boating trips at home.

- Clean mud, plants, animals or other debris from boat or equipment;
- Drain the ballast tanks, bilge, live wells, and motor;
- Dry boat and equipment for 7 days summer; 18 days spring or fall; 30 days winter, or freeze a properly winterized boat and equipment in winter for 3 days.

or

- **Professional Decontamination:** Utah Division of Wildlife Resources' AIS Team (Appendix H), including authorized volunteers, Utah Peace Officers, which includes Conservation Officers and state Park Rangers, and Utah Department of Transportation Port of Entry Agents, under authority of the Utah Aquatic Invasive Species Interdiction Act, and other properly trained persons, will decontaminate boats and equipment infested with AIS as per established protocols (Appendix I). This effort due to capitalistic opportunity is intended to induce proper decontaminations by private vendors.

- Wash the trailer and boat inside and out, including flush ballast tanks, bilge, live wells and motor with high pressure, 140 degree scalding water.

# **IB2c:** Statewide, encourage boaters to routinely decontaminate their equipment after every boating trip--yearlong

Management Objective (C): The Utah AIS Management Plan will facilitate opportunity to apply contemporary natural resource management practices in order to regulate, control and eradicate AIS, allowing rehabilitation of infested areas followed by documented monitoring of success in all phases of management (Appendix K).

- **Plan Development Strategy (1):** Utah Division of Wildlife Resources will prepare, implement and maintain a Utah Aquatic Invasive Species Management Plan, including periodic updates as scientific information evolves regarding AIS management, in concurrence with the Utah Aquatic Invasive Species Task Force and the U.S. Fish and Wildlife Service's national Aquatic Nuisance Species Task Force (Appendix K).
  - One primary action will occur (Appendix K):
    - # **IC1a:** Develop, implement and maintain an approved AIS management plan for the state of Utah—yearlong.

**Public Review Strategy (2):** Utah Division of Wildlife Resources subjected the draft Utah Aquatic Invasive Species Management Plan to a public review process that included Utah Division of Wildlife Resources' five Regional Advisory Councils located throughout Utah, approval by the Utah Wildlife

Board (Appendix G). Once approved by the Utah Wildlife Board occurred, approval by the Utah Governor's Office was secured. Then, ultimate approval by the U.S. Fish and Wildlife Service's national Aquatic Nuisance Species Task Force ensued (Appendix K).

- One primary action will occur (Appendix K):  
# **IC2a:** Conduct a thorough, statewide public review of the Utah AIS Management Plan; after 5 years of implementation do it again in FY2014, modifying the plan as needed  
**Note:** The Utah Wildlife Board via the five regional advisory councils, as a matter of normal procedure, will re-review the plan every five years once it is approved.

**Implementation Strategy (3):** Utah Division of Wildlife Resources will work with Utah's Department of Natural Resources, Utah's Legislature, Utah AIS Task Force and other natural resource management entities to secure adequate funding and cooperation for plan implementation and continuance (Appendix K).

- Four primary actions will occur (Appendix K):  
# **IC3a:** Yearlong, coordinate with decision makers across Utah and the Utah AIS Task Force in order to secure and maintain sufficient budget to conduct the Utah AIS Management Plan.  
# **IC3b:** Yearlong, monitor and manage the budgets associated with the Utah AIS Management Plan.  
# **IC3c:** Yearlong, coordinate statewide with the Utah AIS Task Force and partner agencies or groups in order to implement the Utah AIS Management Plan.  
# **IC3d:** Yearlong, coordinate within Utah Division of Wildlife Resources for development of annual performance management contracts for personnel assigned to the AIS effort.

**Research and Technology Strategy (4):** Utah Division of Wildlife Resources has already contacted Utah State University's Fish and Wildlife Department to assess early detection methodologies, particularly biological arrays using protein markers for identification. Additionally multiple researchers at various labs have been queried about the multiple, different deoxyribonucleic acid polymerase chain reaction tests (PCR) that are available. Further research may evolve based upon findings, need and available funds. It is intended that funds will be secured to maintain a long-term graduate research effort at Utah State University to be directed toward AIS issues (Appendix K).

- Two primary actions will occur (Appendix K):  
# **IC4a:** Yearlong, coordinate with Utah's research institutions, including the Fish Experiment Station in Logan, UT; working labs across the nation; and others to further early detection efforts and protective measures for AIS.

**Note:** Utah Division of Wildlife Resources Fishery Experiment Station, working in concert with Utah's other state fish hatcheries, Utah Department of Agriculture and Food's Fish Health Board, and other research institutions across the nation, perpetually assesses new and different methodologies to protect aquatic animals from AIS.

**# IC4b:** Yearlong, perpetually pursue the scientific literature, sharing information to better the Utah AIS Task Force's understanding of AIS issues and management potentials for AIS.

- **Control and Restoration Strategy (5):** The control of AIS is problematic to the extent that all the different species require varying approaches. For some species control or containment methods are poorly understood, although interest across the world is high, so research is ongoing. Findings from that research will be implemented as appropriate and practicable in Utah.

AIS within the priority 1 and 2 groups identified in this plan have few physical, chemical or biological control methods that can be use in a wild setting. Their invasion of irrigation, municipal or industrial facilities, can often be controlled, but the cost can be difficult for small businessmen and those costs challenge government or even large corporations. The strongest control approach is to simply focus upon keeping AIS out of Utah or contained to areas already infested (Appendix K).

- Five primary actions will occur (Appendix K):

**# IC5a:** Yearlong, focus statewide upon approaches that will keep AIS from either arriving in Utah or for those that have already arrived, keep them contained to infested areas.

**# IC5b:** Compel boaters statewide to self-certify prior to launch that their watercraft have either not been used within the last 30 days on an AIS infested water or that their watercraft have been properly decontaminated—yearlong.

**Note:** Boaters launching in Utah within 30 days from being on an *Dreissenid* infested water are required by law to self-certify pre-launch that they have either implemented a “do-it-yourself” decontamination protocol or a “professional” decontamination protocol.

**# IC5c:** In regards to *Dreissenid* mussels, coordinate statewide the development of control plans for rapid response at every boatable water prior to the mussells arrival or spread—yearlong.

**Note:** Boaters leaving *Dreissenid* affected waters having a control plan in Utah (to date only Electric Lake, affected with zebra mussels, and Red Fleet Reservoir, affected with quagga mussels are affected) will be compelled to decontaminate their watercraft and equipment prior to leaving the water.



# **IC5d:** Yearlong, coordinate statewide the development of control plans for a rapid response to deal with newly arriving or spreading AIS.

# **IC5e:** Upon implementation of a control plan for a rapid response, follow through to ensure that impacted biota are restored and that suitable mitigation ensues.

- **Monitoring and Evaluation Strategy (6):** Monitoring for invasions of AIS or spread of existing AIS is a significant challenge as compared to monitoring and evaluation for control and restoration work. Utah AIS Task Force members and agencies will keep track of invasions of AIS or spread of existing AIS, documenting change in conditions annually (Appendix K). Utah Division of Wildlife Resources' AIS biologists are assigned to conduct inventory for priority 1 & 2 groups of AIS. Distribution is documented and tracked, comparing locations to previous assessments. Workload presented by just the *Dreissenid* species is currently challenging the biologist's ability to perform, so additional assistance from Utah task force agencies is routinely sought. Specific performance measures are:
  - Whether or not plan objectives are achieved;
  - Rate of spread for priority 1 & 2 groups of AIS;
  - Change in total acreage of habitat occupied by priority 1 & 2 AIS groups, noting impacts to native species;
  - Changes in abundance of priority 1 & 2 AIS groups and directly or indirectly impacted species;
  - Changes to Federal and State T&E and extinct species lists due to AIS.
- - Four primary actions will occur (Appendix K):
    - # **IC6a:** Yearlong, monitor using appropriate methodology for arrival or spread of AIS statewide, particularly priority 1 and 2 AIS groups, and document findings, comparing findings to previous investigations.
    - # **IC6b:** In regards to *Dreissenid* mussels, secure plankton samples from every boatable water when water temperatures are appropriate for reproduction and analyze as per UDWR protocol.
    - # **IC6c:** Yearlong, evaluate the effectiveness of the Utah AIS Management Plan, particularly the rapid response strategy and resulting control plans--modify as needed.
    - # **IC6d:** During December of each year, prepare a summary report of outcome for conduct of the Utah AIS Management Plan and distribute/present as appropriate (e.g, Utah AIS Task Force, U.S. Fish and Wildlife Service AIS Coordinator in Region 6, Western Association of Fish and Wildlife Agencies, Utah Legislature, etc.).